PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 :		(11) International Publication Number:
H04N 13/00	**A1**	**WO 00/49813**
		(43) International Publication Date: 24 August 2000 (24.08.00)

(21) International Application Number: PCT/KR00/00134

(22) International Filing Date: 21 February 2000 (21.02.00)

(30) Priority Data:

1999/5718	20 February 1999 (20.02.99)	KR
2000/7292	16 February 2000 (16.02.00)	KR

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(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: SCREEN LINKAGE TYPE STEREOSCOPIC LIGHT SYSTEM

(57) Abstract

The present invention relates to a screen linkage type stereoscopic light system that comprises: a light receiving part for analyzing total light radiating from the screen into three primary colors and sensing brightness of respective colors; a control part for converting and correcting the information on respective colors sensed by the light receiving part into three primary colors of light to control the intensity of respectively colored lights; an amplifying part for amplifying a value output from the control part; and a light emitting part for generating respectively colored lights according to value on the three primary colors of light output from the amplifying part, so that the light emitting parts are installed to link all the parts of the space to appreciate a movie with the same colors and intensity of the light radiating from the screen, thereby enabling viewers to feel realism of the image projected on the screen.

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SCREEN LINKAGE TYPE STEREOSCOPIC LIGHT SYSTEM

BACKGROUND OF THE INVENTION

FILED OF THE INVENTION

The present invention relates to a screen linkage stereoscopic light system, and more particularly to a screen linkage stereoscopic light system which entirely senses color and intensity of light emitting from an image of a screen to link all the parts of the space to appreciate movies with the same colors and brightness of the light radiating from the screen, thereby enabling viewers to feel realism of the image projected on the screen.

DESCRIPTION OF THE PRIOR ART

Nowadays, seeing movies and plays is considered to be the largest part of cultural and recreational life.

Particularly, as the number of cars increases in recent years, there are more drive-in theaters where people can see movies in their cars.

Differently from a dark movie house, there is a large electric screen to project pictures of a movie in such a drive-in theater.

Fig. 1 illustrates a conventional drive-in theater.

As shown in Fig. 1, there is a large electric screen 10 in front of a large parking lot, a space to appreciate a movie, to enable a number of people to view a movie at the same time.

In general, a sound system of the drive-in theater is operated through radio frequency of cars. Thus, viewers situated in region B, far from the large screen 10, can enjoy the same acoustic effects as those in region A, close to the large screen 10.

On the other hand, viewers situated in region A, close to the large screen 10 can receive the maximum quantity of light radiating from the screen 10, while those situated in region B, far from the large screen 10 can not receive the sufficient quantity of light emitting

from the screen 10. Therefore, the viewers situated in region B can not completely perceive the visual effects, but observe simple changes of pictures on the screen 10.

For instance, with a scene of sunrise in the East sea, people can appreciate magnificence of the sunrise when they watch the sun rise out of darkness with atmospheric reddish light spreading all over, not just witness the sun rise out of horizon far away.

However, there is a problem in the conventional drive-in theater in that viewers situated in region A can feel realism of the sunrise on the large screen 10 because they can perceive the red sun rise, feeling all over around themselves the reddish atmospheric light that emits from the large screen 10. On the other hand, viewers situated in region B can simply be aware of the sunrise due to reduction in the intensity of the light radiating from the screen 10.

Furthermore, there is another problem in the conventional home TV in that, when the sunrise is seen on TV screen at home, the viewers can simply be aware of the sunrise without feeling realism thereof.

SUMMARY OF THE INVENTION

Therefore, it is an object of the present invention to solve the aforementioned problems and provide a screen linkage type stereoscopic light system which entirely senses color and intensity of light emitting from an image of a screen to link all the parts of the space to appreciate movies with the same colors and brightness of the light radiating from the screen, thereby enabling viewers to feel realism of the image projected on the screen.

In addition, it is another object of the present invention to provide a screen linkage type stereoscopic light system which receives red, green and blue (RGB) signals relevant to an entire atmosphere of a screen stored at a digital video disc (or digital versatile disc) player (hereinafter referred to as a DVD player) and links with changes in pictures of the screen through a stereoscopic light to thereby allow viewers to perceive realism of pictures shown on the screen.

In order to accomplish the aforementioned object of the present invention, there is provided a screen linkage type stereoscopic light system comprising:

a light receiving part for analyzing entire light radiating from the screen into three primary colors and sensing brightness of respective colors;

an A/D converter for converting signals output from the light receiving part into digital signals;

a control part for converting and correcting the information on respective colors output from the A/D converter into three primary colors of light to control the intensity of respectively colored lights;

a D/A converter for converting the digital signals output from the control part into analog signals;

an amplifying part for amplifying the analog signals output from the D/A converter; and

a light emitting part for generating respectively colored lights according to the values on the three primary colors of light output from the amplifying part.

In addition, there is also provided a screen linkage type stereoscopic light system comprising:

a RGB signal input part for receiving RGB signals output from a DVD player;

a light receiving part for analyzing entire light radiating from the monitor into three primary colors and sensing brightness of respective colors;

an A/D converter for converting signals output from the light receiving part into digital signals;

a control part for converting and correcting the information on respective colors output from the A/D converter into three primary colors of light to control the intensity of respectively colored lights and analyzing the information on respectively colored lights input from the signals through the RGB signal input part;

a D/A converter for converting the digital signals output from the control part into analog signals;

an amplifying part for amplifying the signals output from the D/A converter; and

a light emitting part for generating respectively colored lights according to values on the three primary colors of light output from the amplifying part.

At this time, the light receiving part includes: cyan, magenta and yellow filters to analyze the light radiating from the screen into three primary colors; and light receiving elements to measure intensity of the light transmitted through respective filters and output as electric signals.

Furthermore, the light emitting part includes: red, green, blue filters to generate three primary colors of light; and lamps to generate various intensity of light according to the signals output from the amplifying part.

Operational procedures of the present invention thus constructed are described below.

The entire light of an image projected on the screen is classified into three colors through cyan, magenta and yellow filters of the light receiving part, and the brightness of the colors is output as electric signals and converted into digital signals by the A/D converter. Then, the digital signals are input to the control part, corrected adequate to the image and converted from respective colors into three primary colors of light, red, green and blue. As a result, the control part outputs intensity of the lights relevant to red, green and blue colors of light to control the light emitting part. On the contrary, the RGB signals, the entire atmospheric colors of an image recorded with image signals at DVD title are input to the control part, which outputs intensity of the light relevant to the three colors to control the light emitting part with the RGB signals. Then, the D/A converter converts and outputs the values on the brightness of the respectively colored lights into analog signals. In consequence, the amplifying part amplifies the values to make red, green, blue lamps of the light emitting part illuminate according to the magnitude of the electric currents.

BRIEF DESCRIPTION OF THE DRAWINGS

Objects and aspects of the invention will become apparent from the following description of embodiments with reference to the accompanying drawings in which:

Fig. 1 illustrates a conventional drive-in theater;

Fig. 2 is a block diagram for illustrating a screen linkage type stereoscopic light system of the present invention;

Fig. 3 is a block diagram for illustrating a screen linkage type stereoscopic light system in accordance with an embodiment of the present invention;

Fig. 4 is a block diagram for illustrating a screen linkage type stereoscopic light system in accordance with another embodiment of the present invention;

Fig. 5 illustrates a drive-in theater where a screen linkage type stereoscopic light system of the present invention is applied; and

Fig. 6 illustrates a living room where a screen linkage type stereoscopic light system of the present invention is applied.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

Objects and aspects of the present invention will become apparent from the following detailed description of preferred embodiments with reference to the accompanying drawings. In addition, the preferred embodiments of the present invention will not limit the scope of the present invention, wherein the same reference numerals will be used for the same parts of the present invention as those of the prior art.

Fig. 2 is a block diagram for illustrating a screen linkage type stereoscopic system of the present invention.

As shown in Fig. 2, the screen linkage type stereoscopic system includes: a monitor 20 for transmitting the same pictures projected on the large screen through its small screen to

sense the entire light projected on the large screen; a light receiving part 30 for analyzing the entire light projected from the monitor 20 into three primary colors and sensing brightness of respective colors; an A/D converter 42 for converting signals output from the light receiving part 30 into digital signals; a control part 40 for converting and correcting the information on the respective colors output from the A/D converter 42 into the three primary colors of light to control brightness of respectively colored lights; a D/A converter 44 for converting digital signals output from the control part 40 into analog signals; an amplifying part 50 for amplifying the signals output from the D/A converter 44; and light emitting part 60 for generating respectively colored lights according to the values on the three primary colors of light output from the amplifying part 50.

Operational procedures of the screen linkage type stereoscopic system thus constructed will be described in accordance with an embodiment of the present invention.

In order to readily detect the entire atmospheric light of an image projected on the screen, the entire light of the same image emits through a small screen of the monitor 20 to be analyzed into three primary colors through yellow (Y), magenta (M) and cyan (C) filters of the light receiving part 30. The brightness of colors analyzed and transmitted through the respective filters (Y, M, C) is converted and output as current values by light receiving elements 32.

Then, the current values output from the respective light receiving elements 32 are converted and output as digital signals by the A/D converter 42.

Accordingly, the digital signals output from the A/D converter 42 are received and corrected suitable to pictures of the screen by the control part 40, which then converts the three primary colors into three primary colors of light, red, green, blue to output signals relevant to the brightness thereof.

Thus, the aforementioned signals are output as current values of analog signals by the D/A converter 44. The amplifying part 50 amplifies the current values of the analog

signals, which are then output to turn on lamps 62.

In other words, the amplified current values turn on the lamps 62 of the light emitting part 60. At this time, the intensity of illuminating light is controlled by the current value. In addition, red, green and blue filters (R, G, B) are mounted at the lamps 62 to re-illuminate as the same intensity of light as input from the light receiving part 30.

Fig. 3 is a screen linkage type stereoscopic light system in accordance with an embodiment of the present invention.

As shown in Fig. 3, the screen linkage type stereoscopic system of the present invention includes: a RGB signal input part 80 for receiving RGB signals output from a DVD player 70; a monitor 20 for transmitting the same image projected on the large screen through its small screen; a light receiving part 30 for analyzing entire light radiating from the monitor 20 into three primary colors and sensing brightness of respective colors; an A/D converter 42 for converting signals output from the light receiving part 30 into digital signals; a control part 40 for converting and correcting the information on respective colors output from the A/D converter 42 into three primary colors of light to control the brightness of respectively colored lights and analyzing the information on respectively colors input from the signals through the RGB signal input part; a D/A converter 44 for converting the digital control signals output from the control part 40 into analog signals; an amplifying part 50 for amplifying the signals output from the D/A converter 44; and a light emitting part 60 for generating respectively colored lights according to values on the three primary colors of light output from the amplifying part 50.

Then, the operational procedures thus constructed will be described in accordance with an embodiment of the present invention.

First of all, in order to readily detect the entire atmospheric light of an image projected on the screen, the entire light of the same image that emits through a small screen of the monitor 20 is analyzed into three primary colors through yellow (Y), magenta (M) and

cyan (C) filters of the light receiving part 30. The brightness of the colors analyzed and transmitted through the respective filters (Y, M, C) is converted and output as current values by light receiving elements 32.

Then, the current values output from the light receiving elements 32 are converted and output as digital signals by the A/D converter 42.

If the image is output by the DVD player, a large quantity of contents including captions, sounds of various languages, multiple angles, multiple stories, a variety of menus as well as information on images and sounds recorded at the DVD title can be stored for a variety of interactive functions. Thus, the entire atmospheric color of the image with such information is converted into three primary colors like red, green and blue and recorded as RGB signals. When an image is played by the DVD player, RGB signals are to be output. Then, the RGB signals are received by the RGB signal input part and output to the control part.

Accordingly, the RGB signals are input to the control part 40, which analyzes information on brightness of respective colors, red, green and blue with reference to the RGB signals to operate the light emitting part. On the other hand, if the information on colors of an image sensed by the light receiving part 30 is converted into digital signals and output through the A/D converter 42 to the control part 40, the digital signals are corrected adequate to the image of the screen, converted into three primary colors of light, red, green and blue, and output as signals relevant to brightness of respectively colored lights.

Then, the D/A converter 44 converts the aforementioned signals into current value of analog signals, and the amplifying part 50 amplifies current value of analog signals and outputs larger current value to turn on lamps 62.

In other words, the amplified current value turns on the lamps 62 of the light emitting part 60. At this time, the brightness of respectively colored lights is controlled by the current value. Red, green and blue filters (R, G, B) are mounted at the lamps 62 to re-

illuminate the same lights as input from the light receiving part 30.

In accordance with the first embodiment of the present invention, a monitor 20 is used for sensing and transmitting the entire light radiating from the screen. However, the light emitting form the screen may also be sensed directly on the spot or by combining the signals transmitted to the screen.

Fig. 4 is a block diagram for illustrating a screen linkage stereoscopic light system in accordance with another embodiment of the present invention.

As shown in Fig. 4, the screen linkage type stereoscopic system of the present invention includes: a RGB signal input part 80 for receiving RGB signals output from a DVD player 70; a monitor 20 for transmitting the same image projected on the large screen through its small screen; a light receiving part 30 for analyzing entire light radiating from the screen into three primary colors and sensing brightness of respective colors; an A/D converter 42 for converting signals output from the light receiving part 30 into digital signals; a control part 40 for converting and correcting the information on respective colors output from the A/D converter 42 into three primary colors of light to control the brightness of respectively colored lights, analyzing the information on respectively colored lights input from the signals through the RGB signal input part, controlling the open degree of shutter type filters of a light emitting part 60; a D/A converter 44 for converting the digital signals output from the control part 40 into analog signals and operating light blocking means 680; and a light emitting part 60 for generating respectively colored lights according to the output of the control part 40.

At this time, the light emitting part 60 includes: a frame 610 for consisting of its body; a bulb 630 as a light source mounted inside the frame 610 for illuminating by electrical power; a reflecting mirror 620 made of a material having a high reflex and attached at the internal surface of the frame 610; light blocking means 680 installed in front of the frame 610 that surrounds the bulb 630 for blocking or transmitting the light radiating from the bulb 630; a blue shutter type filter 663 installed in front of the light blocking means 680 for converting

the light radiating from the bulb 630 into blue colored light; a green shutter type filter 662 installed in front of the blue shutter type filter 663 for converting the light radiating from the bulb 630 into green colored light; a red shutter type filter 661 installed in front of the green shutter type filter 662 for converting the light radiating from the bulb 630 into red colored light; a lens 640 installed in front of the red shutter type filter 661 for scattering or condensing the radiating light; and first through third motors 671, 672, 673 for respectively changing the open degree of the three shutter type filters 661, 662, 663.

Operational procedures of the embodiment of the present invention thus constructed will be described below.

First of all, in order to readily detect the entire atmospheric light of an image projected on the screen, the entire light of the same image that emits through a small screen of the monitor 20 is classified into three primary colors of light through yellow (Y), magenta (M) and cyan (C) filters of the light receiving part 30. The brightness of the respectively colored lights analyzed and transmitted through the filters (Y, M, C) is converted and output as relevant current values through light receiving elements 32.

Then, the current values output from the respective light receiving elements 32 are converted and output as digital signals by the A/D converter 42.

If the image is output by the DVD player, a large quantity of contents including captions, sounds of various languages, multiple angles, multiple stories, a variety of menus as well as information on images and sounds recorded at the DVD title can be stored for a variety of interactive functions. Thus, the entire atmospheric color of the image with such information is converted into three primary colors like red, green and blue and recorded as RGB signals. When the image is made by the DVD player, RGB signals are to be output. Then, the RGB signals are received by the RGB signal input part and output to the control part.

Accordingly, the RGB signals are input to the control part 40, which analyzes

information on concentration of respective colors, red, green and blue with reference to the RGB signals to operate the light emitting part. On the other hand, if the information on colors of an image sensed by the light receiving part 30 is converted into digital signals and output through the A/D converter 42 to the control part 40, the digital signals are corrected adequate to the image of the screen and converted into three primary colors of light, red, green and blue to thereby determine the open degree of respective shutter type filters 661, 662, 663. Then, the control part 40 also outputs values to operate the first through third motors 671, 672, 673 according to the open degrees of the filters 661, 662, 663.

At this time, if a colored light, blue, irradiates, the red and green shutter type filters 661, 662 are respectively set at an open angle of 90 degree, and the first and second motors 671, 672 completely open the red and green shutter type filters 661, 662. The blue shutter type filter 663 is set at an open angle of 0 degree to be completely closed by the third motor 663, so that the light radiating from the bulb 630 transmits through the blue shutter type filter 663 and converts into blue light to radiate out as it is without any contact with the red and green shutter type filters 661, 662. As a result, the blue light can illuminate.

Similarly to the aforementioned description, if red light irradiates, only the red shutter type filter 661 is closed and the other green and blue shutter type filters 662, 663 are opened to acquire the red light. In addition, if green light irradiates, the green shutter type filter 662 is closed and the other red and blue shutter type filters 661 and 663 are opened to acquire the green light.

On the other hand, if light of mixed colors radiates, the open degree of the red, green and blue shutter type filters 661, 662, 663 are controlled to get in contact with red, green and blue shutter type filters 661, 662, 663 in accordance with the intensity of respectively colored lights. The respectively colored lights transmitted through the filters are scattered and overlapped to result in a mixed color of light.

At this time, the magnitude of current is controlled to adjust the quantity of light to

the brightness of the light.

Fig. 5 illustrates a drive-in theater where a screen linkage type stereoscopic light system of the present invention is applied.

As shown in Fig. 5, the light emitting parts 60 of the present invention are installed around the drive-in theater. Therefore, the entire atmospheric colors of light radiating from the screen are input to the light emitting parts 60, through which the atmospheric light of the image projected on the large screen is linked to all parts of the theater. In consequence, even viewers situated at a region of the theater, where only dim light of the screen reaches, can appreciate the realism of the images depicted in the movie.

Fig. 6 illustrates a living room where a screen linkage type stereoscopic light system of the present invention is applied.

As shown in Fig. 6, the light emitting parts 60 are installed at corners of the room, so that a viewer, who watches TV 70, can strongly perceive changes in the dim light of images projected on the TV screen.

As described above, there is an advantage in the screen linkage type stereoscopic light system in that the light emitting parts are installed to link all the parts of the space to appreciate a movie with the same colors and intensity of the light radiating from the screen, thereby enabling viewers to feel realism of the image projected on the screen.

In addition, there is another advantage in the screen linkage type stereoscopic light system in that the colors and intensity of the entire atmospheric light of the screen is recorded at the DVD title as the RGB data and, then, input to the light emitting part of the RGB lights to radiate to all over the space to appreciate images of a movie, thereby enabling viewers to feel realism of the images projected on the screen at any parts of the space.

Furthermore, there is a still another advantage in the screen linkage type stereoscopic light system in that a multicolored lighting tool is used as a single illuminating source of the light emitting part for generating a variety of colors, thereby solving a problem of installing a

plurality of uni-colored lighting tools.

What is claimed is:

1. A screen linkage type stereoscopic light system which comprises:

a light receiving part for analyzing entire light radiating from the screen into three primary colors and sensing brightness of respective colors;

an A/D converter for converting signals output from the light receiving part into digital signals;

a control part for converting and correcting the information on respective colors output from the A/D converter into three primary colors of light to control the intensity of respectively colored lights;

a D/A converter for converting the digital control signals output from the control part into analog signals;

an amplifying part for amplifying signals output from the D/A converter; and

a light emitting part for generating respectively colored lights according to values on the three primary colors of light output from the amplifying part.

2. A screen linkage type stereoscopic light system which comprises:

a RGB signal input part for receiving RGB signals output from a DVD player;

a light receiving part for analyzing entire light radiating from the screen into three primary colors and sensing brightness of respective colors;

an A/D converter for converting signals output from the light receiving part into digital signals;

a control part for converting and correcting the information on respective colors output from the A/D converter into three primary colors of light to control the intensity of respectively colored lights and analyzing the information on respective colors input from the signals through the RGB signal input part;

a D/A converter for converting the digital signals output from the control part into

analog signals;

an amplifying part for amplifying the signals output from the D/A converter; and

a light emitting part for generating respectively colored lights according to value on the three primary colors of light output from the amplifying part.

3. The system, as defined in claim 1 or 2, wherein the light receiving part comprises:

cyan, magenta and yellow filters to analyze into three primary colors; and

light receiving elements to measure intensity of the light transmitted through respective filters and output as electric signals.

4. The system, as defined in claim 1 or 2, wherein the light emitting part comprises:

red, green, blue filters to generate the three primary colors of light; and

lamps to generate various intensity of light according to the signals output from the amplifying part.

5. A screen linkage type stereoscopic system which comprises:

a RGB signal input part for receiving RGB signals output from a DVD player;

a light receiving part for analyzing entire light radiating from the screen into three primary colors and sensing brightness of respective colors;

an A/D converter for converting signals output from the light receiving part into digital signals;

a control part for converting and correcting the information on respective colors output from the A/D converter into three primary colors of light to control the brightness of respectively colored lights, analyzing the information on respectively colored lights input from the signals through the RGB signal input part and controlling the open degree of shutter type filters of a light emitting part; and

a light emitting part for generating respectively colored lights according to the outputs of the control part.

6. The system, as defined in claim 5, wherein the light emitting part comprises:

a frame for consisting of a body;

a bulb as a light source mounted in the frame for illuminating by electrical power;

a reflecting mirror made of a material having a high reflex and attached at the internal surface of the frame;

light blocking means installed in front of the frame that surrounds the bulb for blocking or transmitting the light radiating from the bulb;

a blue shutter type filter installed in front of the light blocking means for converting the light radiating from the bulb into blue colored light;

a green shutter type filter installed in front of the blue shutter type filter for converting the light radiating from the bulb into green colored light;

a red shutter type filter installed in front of the green shutter type filter for converting the light radiating from the bulb into red colored light;

a lens installed in front of the red shutter type filter for scattering or condensing the irradiating light; and

first through third motors for respectively changing the open degree of the three shutter type filters.

7. The system, as defined in claim 6, wherein the red, green and blue shutter type filters are made of a plurality of small filters.

8. The system, as defined in claim 6, wherein the light blocking means is an apparatus for varying a light transmission factor in accordance with resistance value to block the light,

the resistance value being determined by a variable temperature.

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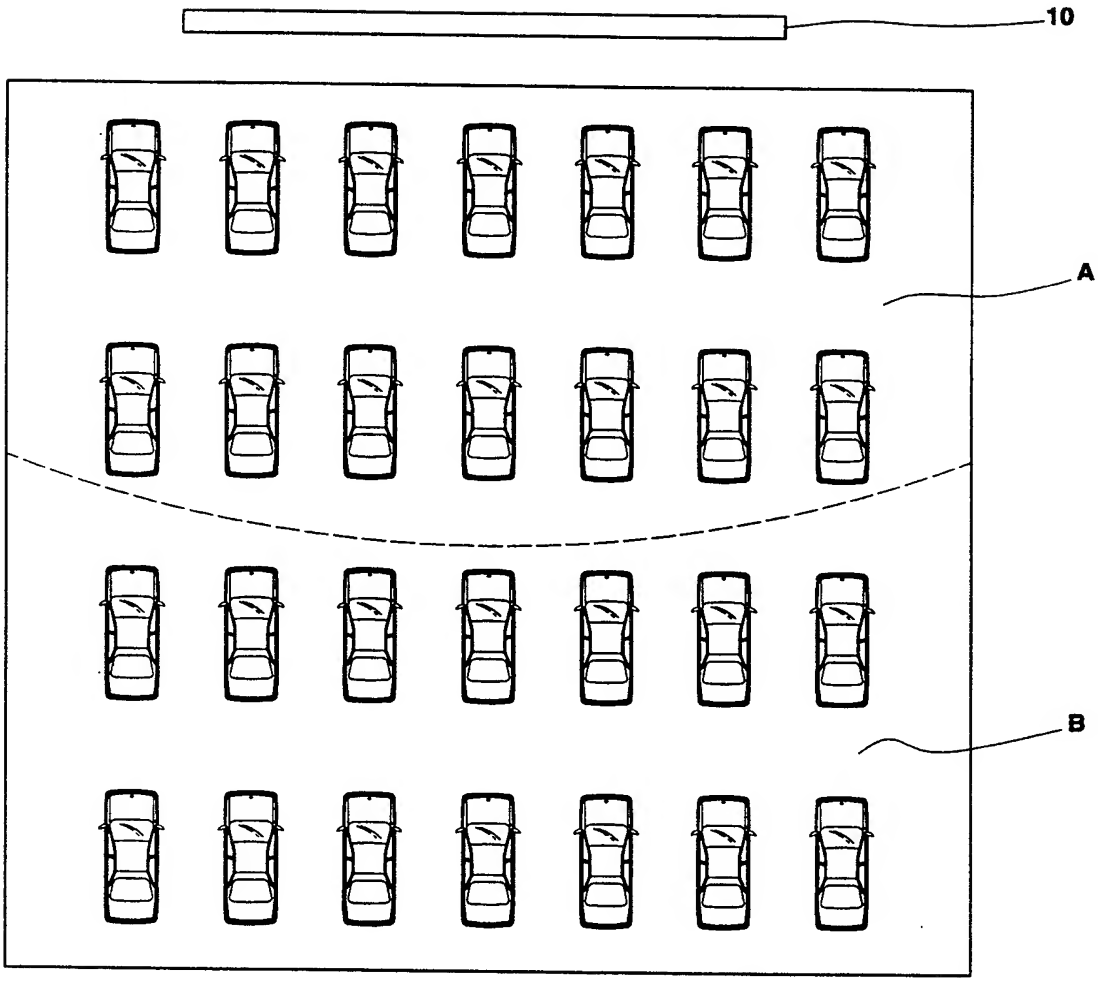
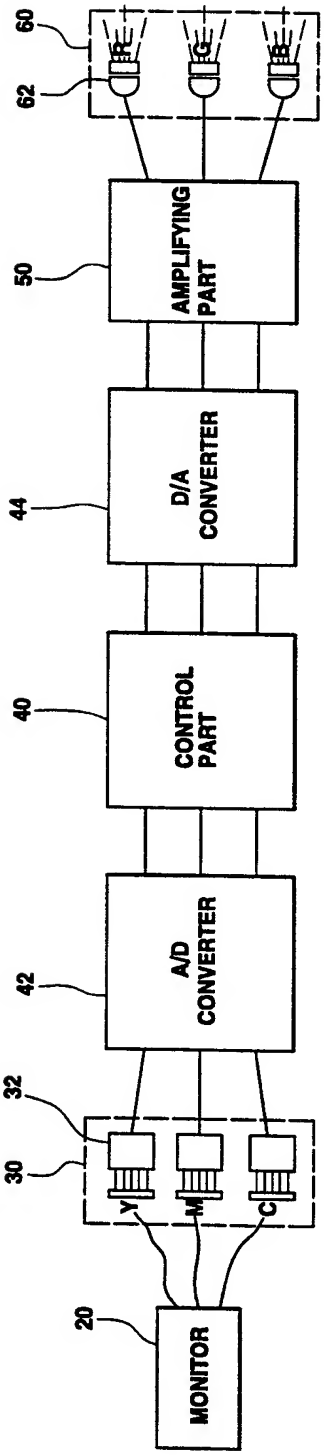


FIG. 1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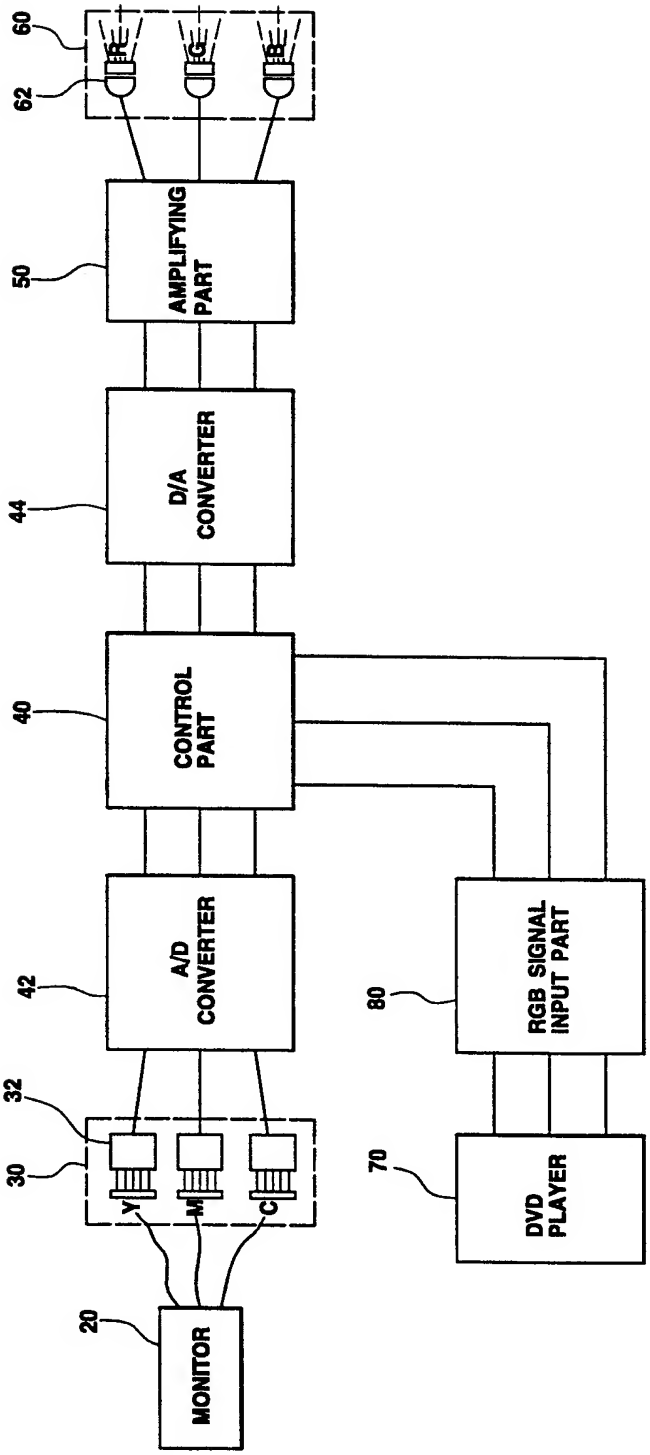
MONITOR

FIG. 2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CONTROL PART
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A/D CONVERTER
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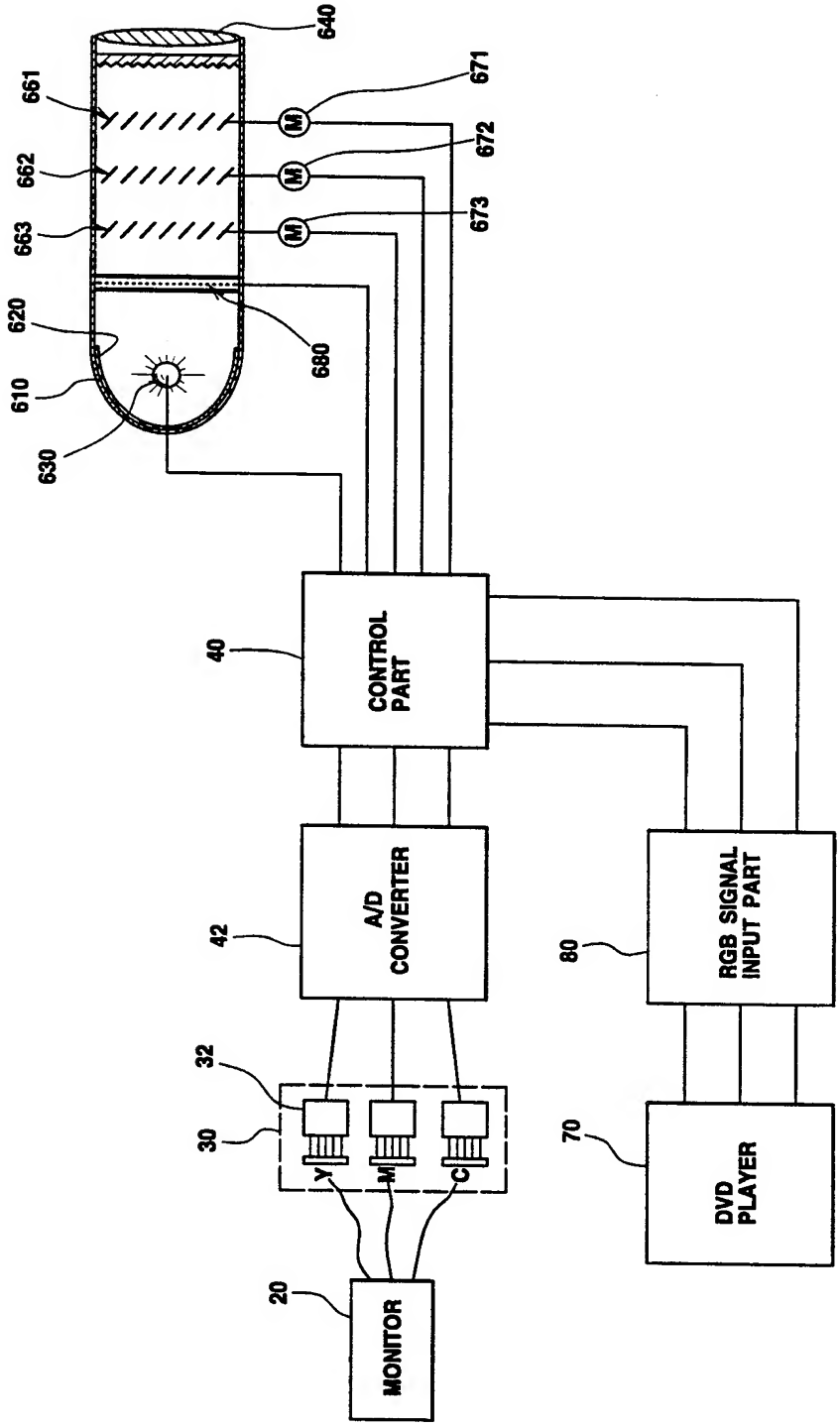
Y
M
C
MONITOR
20
RGB SIGNAL INPUT PART
80
DVD PLAYER
70

FIG. 3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40
CONTROL PART
42
A/D CONVERTER
80
RGB SIGNAL INPUT PART
32
30
Y
M
C
70
DVD PLAYER
20
MONITOR

FIG. 4

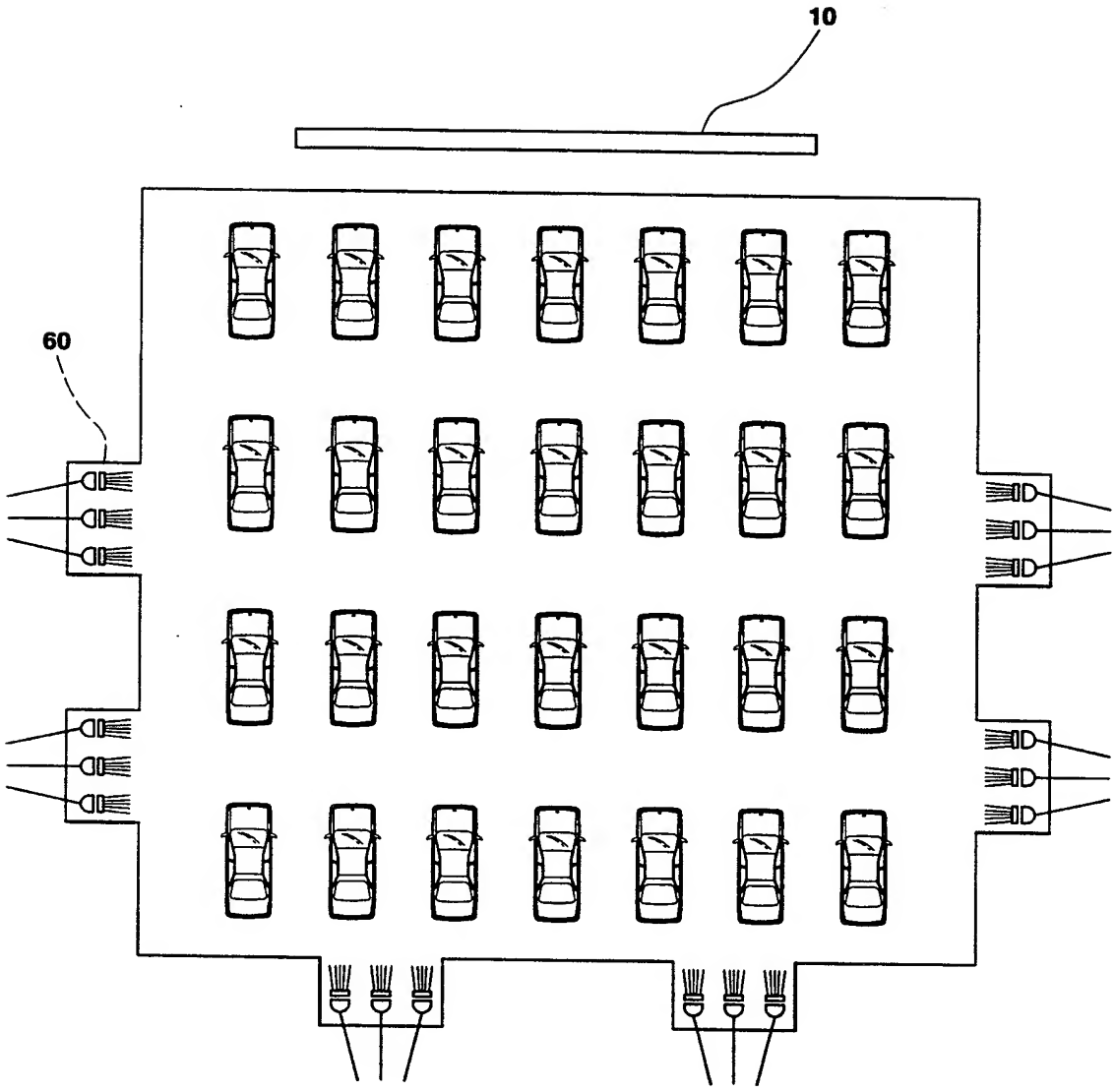

FIG. 5

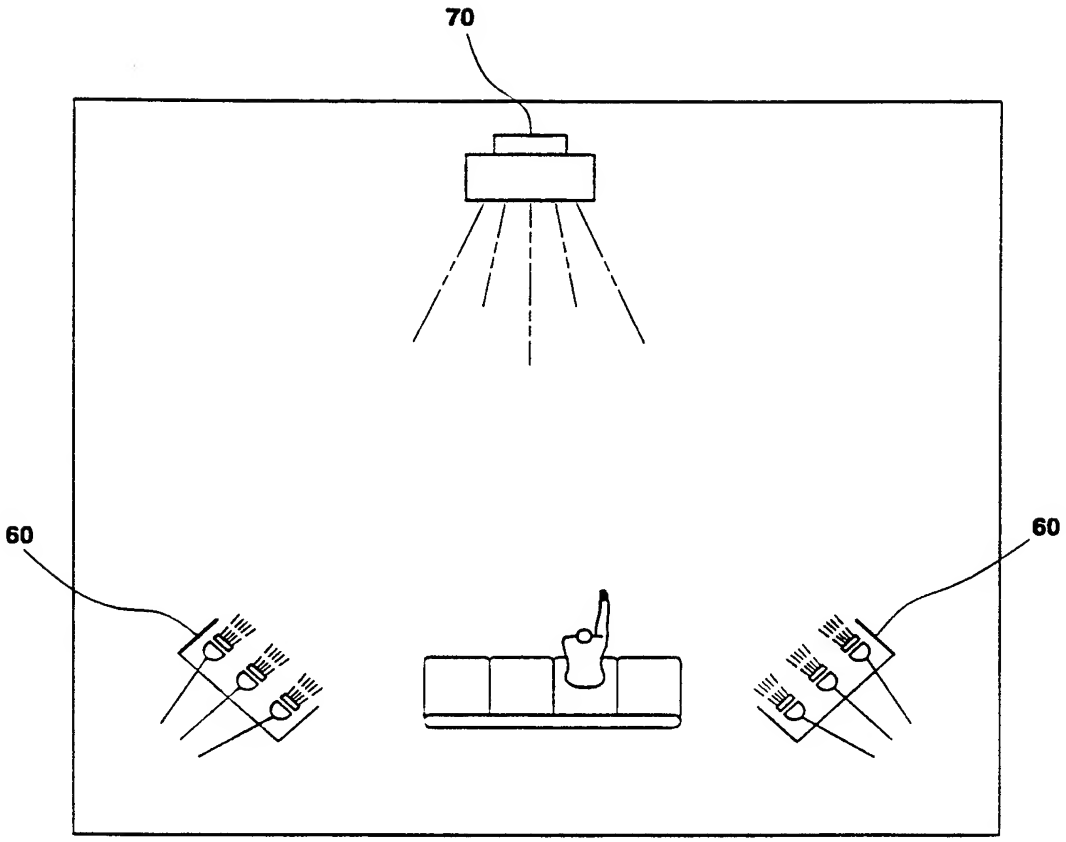

FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR00/00134

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 H04N 13/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimun documentation searched (classification system followed by classification symbols)

IPC7 H04N 13/00

Documentation searched other than minimun documentation to the extent that such documents are included in the fileds searched

korean patents and applications for inventions since 1975
korean utility models and applications for utility models since 1975
Japaness utility models and applications for inventions since 1975

Electronic data base consulted during the intertnational search (name of data base and, where practicable, search trerms used)

JAPIO, INSPECT "screen stereoscopic primary color"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 9-168163 (SHARP CO.) 24 JUNE 1997 see page 2, claim 1; page column 2, line 31 - page 3, column1, line 6	1-4, 7
Y	JP 7-203464 (CANNON CO.) 4 AUGUST 1995 see page 2, column 1 - page 4, column1, line 2	1-2,4,7

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevence

"E" earlier application or patent but published on or after the international filing date

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevence; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevence; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 MAY 2000 (18.05.2000)	18 MAY 2000 (18.05.2000)

Name and mailing address of the ISA/KR	Authorized officer
Korean Industrial Property Office Government Complex-Taejon, Dunsan-dong, So-ku, Taejon Metropolitan City 302-701, Republic of Korea	KIM, Hee Gon
Facsimile No. 82-42-472-7140	Telephone No. 82-42-481-5770

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/KR00/00134

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 9-168163 A	24. 6. 97	NONE	
JP 7-203464 A	4. 8. 95	NONE	